

MEETING LOG  
DIRECTORATE FOR ENGINEERING SCIENCES

CPSA 6 (b)(1) Cleared

18 MAY 1994

SUBJECT: ANSI Z21/CGA Joint Central Furnace Technical Working Group (CWG)  
and Communications Working Group (TWG)

PLACE: Sheraton Hopkins Airport, Cleveland, Ohio

MEETING DATE: 04/27/94 - 04/29/94

LOG ENTRY SOURCE: Ronald A. Jordan

*RAJ*

ENTRY DATE: 05/10/93

COMMISSION ATTENDEES:

Ronald A. Jordan

ES

NON-COMMISSION ATTENDEES:

Paul E. Beach  
(TWG, CWG)

White-Rodgers Division  
Emerson Electric Company

Glenn T. Hooker  
(TWG)

Union Gas Limited

Donald Hussong  
(TWG)

Consolidated Industries  
Corporation

Michael Eberlein  
(TWG)

Amana Refrigeration, Inc.

Donald L. Shrader  
(TWG, CWG)

Baltimore Gas and Electric  
Company

P.F. Swenson  
(TWG)

CNG Service Company

Hall Virgil  
(TWG)

Carrier Corporation

James Gazda  
(TWG, CWG)

AGA Laboratories

Bobby Crawford  
(TWG, CWG)

AGA Laboratories

✓

Gary Thibeault	Gas Appliance Manufacturers Association
Jake J. Verderber (CWG, TWG)	Rheem Manufacturing Company
George H. Lofgren (CWG, TWG)	Consultant for Minnegasco
Alan R. Anderson (CWG)	Honeywell Inc.
Ajax Arvin (CWG)	Keating of Chicago, Inc.
Gale Schmidt (CWG, TWG)	
Bob Vincent (CWG, TWG)	Suburban Manufacturing
Will Garth (CWG)	UARCO, Inc.

## **MEETING SUMMARY:**

The ANSI Z21/CGA Joint Central Furnace Technical Working Group (TWG) and Communications Working Group (CWG) members represent broad interests in the areas of gas appliance and component manufacturing, as well as gas production, distribution, and utilization. The TWG and CWG members met to focus on and discuss technical and communications issues pertaining to the harmonized central furnace standard (Z21.47 and Z21.64). Many of the issues that each working group discussed will be submitted to the Joint Central Furnace Subcommittee for consideration as revisions to the harmonized "American National Standard/National Standard of Canada for Gas-Fired Central Furnaces."

CPSC staff attended this meeting in order to respond to any safety related discussion and/or recommendations. Following are the CWG and TWG meeting highlights:

### **Communications Working Group meeting, June 27, 1994.**

#### **Item 5. Request To Revise Appliance User Instructions.**

This item requested the CWG to consider adding steps for the user to take in the event of a safety system lockout. Staff took this opportunity to express its opinion that safe and proper

use of products could be made more effective by making a clearer distinction between safety related instructions and the general installation or maintenance instructions, and by explicitly stating the specific hazards associated with warnings and instructions. Staff acknowledged that many accidents occur as a result of a user or installers' failure to follow certain instructions. Staff reasoned that many of these accidents could be prevented if users or installers' awareness of the safety related consequences of not following instructions were increased, and that this could be accomplished through the suggestions that staff made.

In response to this, Gary Thibeault of GAMA stated that GAMA's Furnace Engineering Committee(himself included) with the assistance of a consultant, are currently developing a Consumer Furnace/Carbon Monoxide (CO) Awareness information and education program. According to Mr. Thibeault, this campaign will include a consumer information effort designed to inform consumers of CO hazards associated with their furnaces. Mr. Thibeault stated that this committee will also make recommendations (to the Joint Central Furnace Subcommittee) for the Users Information Manual section of the furnace standard. He stated that this effort and the recommendations made will address some of the concerns raised by staff. Staff informed Mr. Thibeault that CPSC would like to be kept abreast of the progress of this effort and to provide input when possible. He replied that this will be done. When staff asked how long this effort would take, Mr. Thibeault replied that the effort would take between a couple of months and one (1) year.

Will Garth, the representative for UARCO, Inc. gave a presentation of his company's Label Integration Technology.

#### **Technical Working Group meeting, June 28-29, 1994.**

#### **Item 6. Report From Working Group Established To Review Proposed Revisions to 4.4.6, In Light Of Comments Received**

The TWG meeting began with a video presentation by Bob Vincent of Suburban Manufacturing. The purpose of the presentation was to offer support for the proposed exemption of RV furnaces from the blocked flue exhaust/vent intake test (Section 4.4.6) in the furnace standard.

The video demonstrated general design and operating differences between gas-fired RV furnaces and residential furnaces. According to Mr. Vincent, the blocked flue outlet/vent intake test requires RV furnaces to shut-off at a static pressure of 0.28 inches water column (in. w.c.) in the flue exhaust or 0.20 in. w.c. at the vent intake. He stated that these static pressures corresponded to 75% vent blockage in the furnace that was tested. He stated that although the test is designed to protect against production of unacceptable concentrations of CO (400 ppm and above), the RV furnace that was tested only produced CO concentrations around 70 to 80 ppm at 75% vent blockage. Mr. Vincent stated that the static pressures required to cause an RV furnace to shut off are readily generated when an RV furnace is operating within its typical voltage range (9.5 to 15.5 volts).

Mr. Vincent voiced his concern that because these conditions occur during normal operating

conditions, they will result in RV furnaces (1) not passing the test or (2) having numerous "nuisance" shut downs in the field. Mr. Vincent argued that in light of the differences in design and operating characteristics demonstrated by the video, as well as their inability to pass the test, RV furnaces should be exempted from the test.

After Mr. Vincent's presentation, staff acknowledged the design and operating differences between RV and residential furnaces. Staff stated, however, that the presentation did not change its opinion that RV furnaces should **continue** to be subjected to the same or equivalent safety requirements as residential furnaces. Staff asked Mr. Vincent if an equivalent or alternative test was being proposed. Mr. Vincent replied "no." Staff asked if an RV furnace's voltage could be regulated to keep it within an acceptable range, since the problem seems to occur at the upper limits of the voltage range that RV furnaces typically operate in. An RV furnace manufacturer representative replied that this option is not without its degree of technical difficulty to implement.

When asked, Mr. Vincent stated that RV furnaces are designed to shut down at 95 to 100 percent blockage. Staff asked that since an RV furnace will shut down at 95 to 100 percent blockage, and because part of the problem is its operation and required shut down at 75 percent vent blockage, could the problem be alleviated by requiring RV furnaces to shut off at blockages between 80 and 95 percent for this test. Mr. Vincent replied "no", because at 80 percent blockage, an RV furnace would produce CO concentrations in excess of the 400 ppm limit.

After much discussion, the TWG chairman, Mike Eberlein of York Manufacturing, asked the group if a consensus had been reached about the merit of the proposal. A consensus had not been reached, therefore the TWG did not approve the exemption of RV furnaces from the blocked flue exhaust/vent intake test. Mr. Eberlein stated that the TWG's recommendation (i.e. disapproval of the proposal) would be forwarded to the Joint Central subcommittee for consideration at its September 1994 meeting.

It was suggested that in the mean time, RV furnace manufacturers explore technical solutions to this problem, in lieu of exemption from the blocked vent/intake test. The RV furnace manufacturer representatives proposed to address the problem by (1) pursuing other technical alternatives, or (2) proposing a requirement that RV furnaces shut off at 95 to 100 percent blockage after a period of time (@ 10 minutes). They agreed to explore these options and present their findings at the September 1994 Central Furnace Subcommittee meeting. Other RV furnace manufacturers compared RV furnaces to direct vent wall furnaces, stating that direct vent wall furnaces are not required by the applicable ANSI standard to be equipped with a Vent Safety Shutoff System nor comply with the blocked flue exhaust/vent intake test. They argued that since, in their opinion, RV furnaces are more like direct vent wall furnaces, then they should not have to comply with blocked vent exhaust/intake test either.

**Item 10. Request To Gather Information and Data On Incidents With Central Furnaces Common Vented With DraftHood Equipped Water Heaters.**

This agenda item involved a proposal to require furnace inducer fans to shut down after a set

amount of time if the furnace malfunctions and does not fire. This proposal was in response to incidents in Canada, in which furnace inducer fans continued to run while the furnace was not generating heat. These furnaces were common vented with gas-fired water heaters, causing the water heaters to spill combustion products into the living area. At its September 1993 meeting, the TWG agreed to obtain input from ~~GAMA~~'s Central Furnace and Water Heater Technical Engineering Committees to address this issue. The TWG also agreed to gather data, if available, from Canada's AFOR and the U.S. Utility GAIN programs and to provide a report to the joint subcommittee at its next meeting. Thus far, Paul Swenson, CNG, and John Erikson, AGA, have looked into this problem in the U.S. Mr. Swenson reported that they did not identify a trend involving this problem. He also stated that this problem might be more appropriate for the Z223.1 committee (National Fuel Gas Code) to handle. The gas utility representatives in attendance stated that they have not seen many incidents involving this problem, and those that they have observed, they attributed to improper installation of the vent system. The TWG concluded that there was not enough information to approve this proposal.

Staff inquired if any action had been taken to address concerns raised by staff at the ANSI Z21/CGA Joint Central Furnace Subcommittee held in February of 1993. The concerns involved an incident in which flue products leaked through a hole from the flue pipe into the circulating air stream. The subcommittee sent that action item to the TWG for consideration. The TWG president replied that they had not taken any action on this issue and that they had no background information on this item since it was not on the agenda. He recommended that staff re-submit the item in time to go on the agenda for the next TWG or Subcommittee meeting.

Cc: Colin Church, EXHR  
Joe Fandey, ESEE  
Stacy Reuben-Mesa, EXPA